

## **Conclusion**

The presented study focused on gender-sensitive collaborative learning through PBL, in which all students were given an equal chance to participate and fully engage in learning. It showed that the PBL collaborative learning activities encouraged students to learn and perform better than those taught using traditional lecturing. The rote learning instruction, prevailing in most Indonesian classrooms, is unlikely to increase both students' English performance and gender awareness.

Based on the study, this student-centered instructional approach is necessary for teacher colleges in Indonesia to prepare their student-teachers to design and implement more engaging classes, where male and female students are given an equal chance to develop their full potentials. It means that upcoming school curriculum reforms in this country require, first of all, promotion of both pre- and in-service teacher training programmes to improve the respective students' and teachers' ability to manage the gender-sensitive and more stimulating student-centered learning approaches.

The study showed that PBL should be carried out while considering individual differences regarding students' academic potentials and some diversity variables, the major sources of inequality of education. Since this study neither randomly selected individual students from a given population nor assigned them to each of the groups, a future study needs to discriminate the effects of PBL intervention and use some diversity variables (gender, socio-economic and cultural backgrounds) in the selection and assignment of students.

## **References**

- ACDP Indonesia (2013). Gender Equality in Education in Indonesia. Education Sector Analytical and Capacity Development Partnership (ACDP), Policy Brief, MOEC Office for Research and Development, September 2013.
- Applefield, J.M., Huber, R., & Moallem, M. (2000). Constructivism in theory and practice: Toward a better understanding. *The High School Journal*, 84(2), 35–53.
- Attard, A., Di Loio, E., Geven, K., & Santa, R. (2010). Student centered learning: An insight into theory and practice. *Partos Timisoara, Bucharest*, 6–15.
- Barell, J. (2007). *Problem-based learning: An inquiry approach* (2<sup>nd</sup> ed.). Thousand Oaks, CA: Corwin Press, Inc.
- Biggs, J.C. Tang. (2007). *Teaching for quality learning at university* (3rd ed.). New York, NY: McGraw Hill.
- Atkins, M., & Brown, G. (2002). *Effective teaching in higher education*. Routledge.
- Das Carlo, M., Swadi, H., & Mpofu, D. (2003). Medical student perceptions of factors

- affecting productivity of problem-based learning tutorial groups: does culture influence the outcome? *Teaching and Learning in Medicine*, 15(1), 59–64.
- Confrey, J. (1990). What constructivism implies for teaching. In R.B. Davis, C.A. Maher & N. Noddings (eds.), *Constructivist Views on the Teaching and Learning of Mathematics (JRME monograph 4)* (pp. 107–122). Reston, VA: NCTM
- Eggen, P.D. & Kauchak, D.P. (2012). *Strategies and models for teachers: Teaching content and thinking skills* (6<sup>th</sup> ed.). Pearson/Allyn and Bacon.
- Glaserfeld, Von. E (2003). An Exposition of Constructivism: Why Some Like It Radical. In *Facets of systems science* (pp. 229–238). Springer, Boston, MA.
- Gorghiu, G., Drăghicescu, L.M., Cristea, S., Petrescu, A.M., & Gorghiu, L.M. (2015). Problem-based learning-an efficient learning strategy in the science lessons context. *Procedia-Social and Behavioral Sciences*, 191, 1865–1870.
- Harun, N.F., Yusof, K.M., Jamaludin, M.Z., & Hassan, S.A.H.S. (2012). Motivation in problem-based learning implementation. *Procedia-Social and Behavioral Sciences*, 56, 233–242.
- Hung, W. (2016). All PBL starts here: The problem. *Interdisciplinary Journal of Problem-Based Learning*, 10(2), 2. <http://dx.doi.org/10.7771/1541-5015.1604>
- Khan, M.A.A., & Sobani, Z.A. (2012). Influence of Gender and Ethnicity on Problem-Based Learning. *Journal of Pakistan Medical Students*, 2(3).
- Loewenstein, G. (1994). The psychology of curiosity: A review and reinterpretation. *Psychological bulletin*, 116(1), 75.
- Machemer, P.L., & Crawford, P. (2007). Student perceptions of active learning in a large cross-disciplinary classroom. *Active learning in higher education*, 8(1), 9–30.
- MacLellan, E., & Soden, R. (2004). The importance of epistemic cognition in student-centred learning. *Instructional Science*, 32(3), 253–268.
- Mangindaan, M.C., & Elley, W.B. (1979). Evaluation of achievement in the Indonesian education system. *Evaluation in Education. International Progress*, 2(4), 282–351.
- OECD (Organization for Economic Cooperation and Development ). (2013) Knowledge and Skills for Life: FIRST Results from Pisa (2000). Programme for International Student Assessment.
- Pease, M.A., & Kuhn, D. (2011). Experimental analysis of the effective components of problem – based learning. *Science Education*, 95(1), 57–86.
- Pourshanazari, A.A., Roohbakhsh, A., Khazaei, M., & Tajadini, H. (2013). Comparing the long-term retention of a physiology course for medical students with the traditional and problem-based learning. *Advances in Health Sciences Education*, 18(1), 91–97.
- Reynolds, F. (2003). Initial experiences of interprofessional problem-based learning: a comparison of male and female students' views. *Journal of Interprofessional Care*, 17(1), 35–44.
- Savage, N & R. Birch. (2008). An evaluation of motivation in engineering students, employing self-determination theory. *Innovation, Good Practice and Research in Engineering Education*, 1(10)
- Stinson, J.E., & Milter, R.G. (1996). Problem – based learning in business education:

- Curriculum design and implementation issues. *New directions for teaching and learning*, 1996(68), 33–42.
- Suryadi, A. (2016). Readdressing teacher challenges: The case of Indonesia. *International Journal of Economic Research*, 13(6), 2571–2585.
- Suryadi, A., Rosyidi, U. & Budimansyah, D. (2017). Does teaching licensure boost student learning? Indonesia's Answer. *The New Educational Review*, 49(3), 261–270.
- Suryadi, A. & Budimansyah, D. (2016). Advance school leadership, progress teaching approach and boost learning. *The New Educational Review*, 45(3), 76–85.
- UNESCO. (2004). *Gender and education for all: The leap to equality* (Summary Report). Paris: UNESCO Publishing.
- Visschers-Pleijers, A.J., Dolmans, D.H., Wolfhagen, I.H., & Van Der Vleuten, C.P. (2004). Exploration of a method to analyze group interactions in problem-based learning. *Medical teacher*, 26(5), 471–478.
- Yew, E.H., & Goh, K. (2016). Problem-based learning: an overview of its process and impact on learning. *Health Professions Education*, 2(2), 75–79.